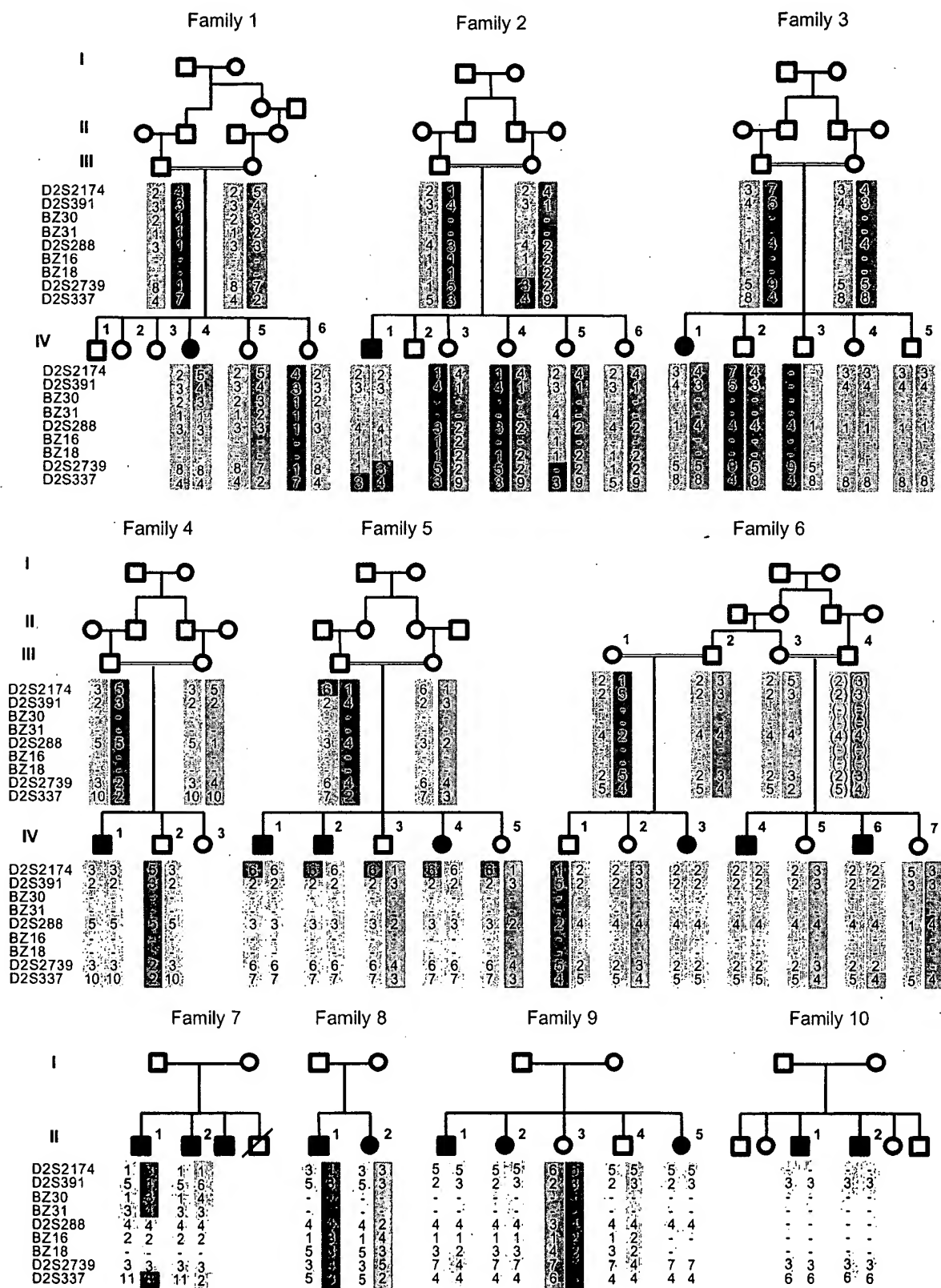


FIG 1



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FIG 2

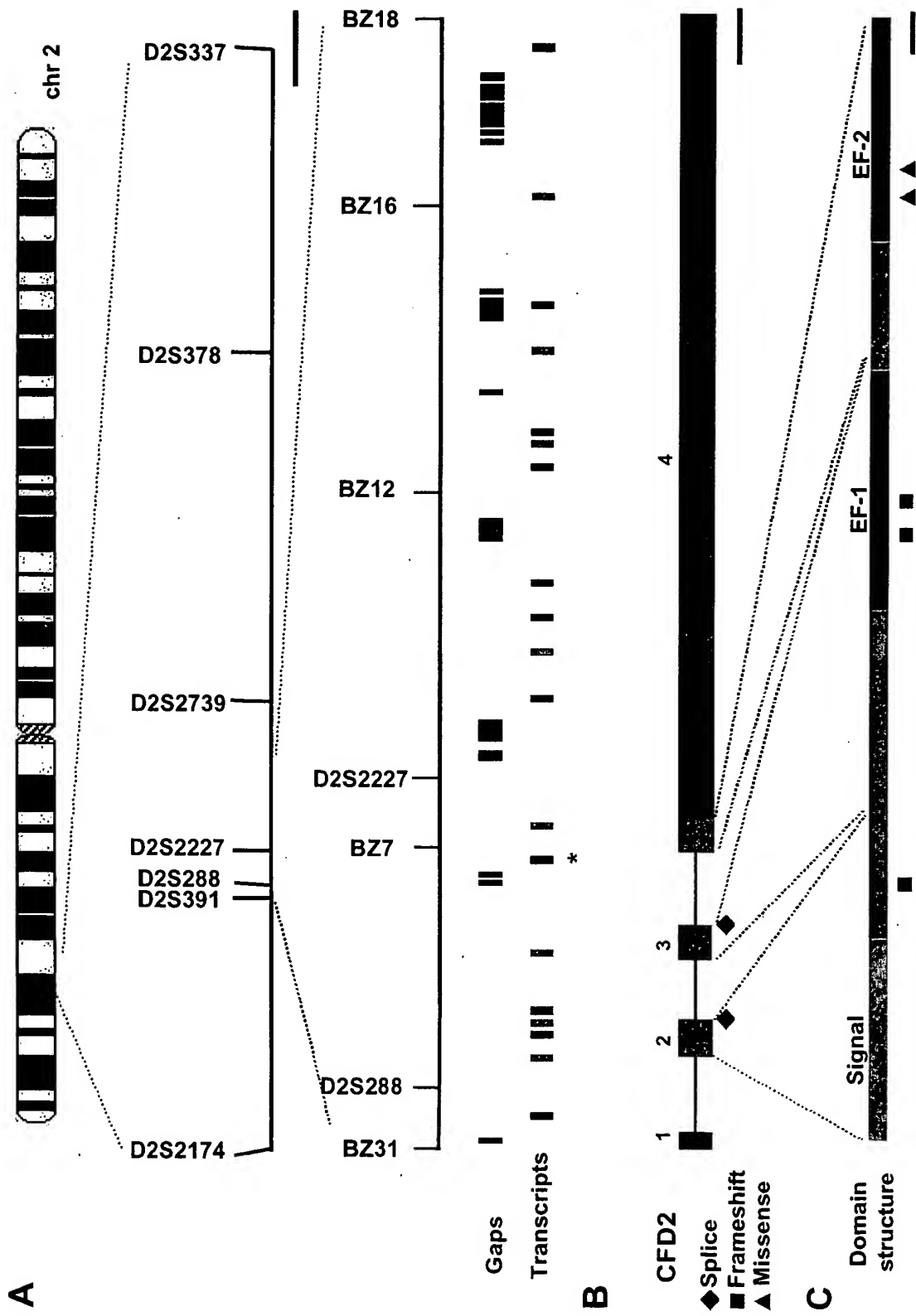


FIG 3

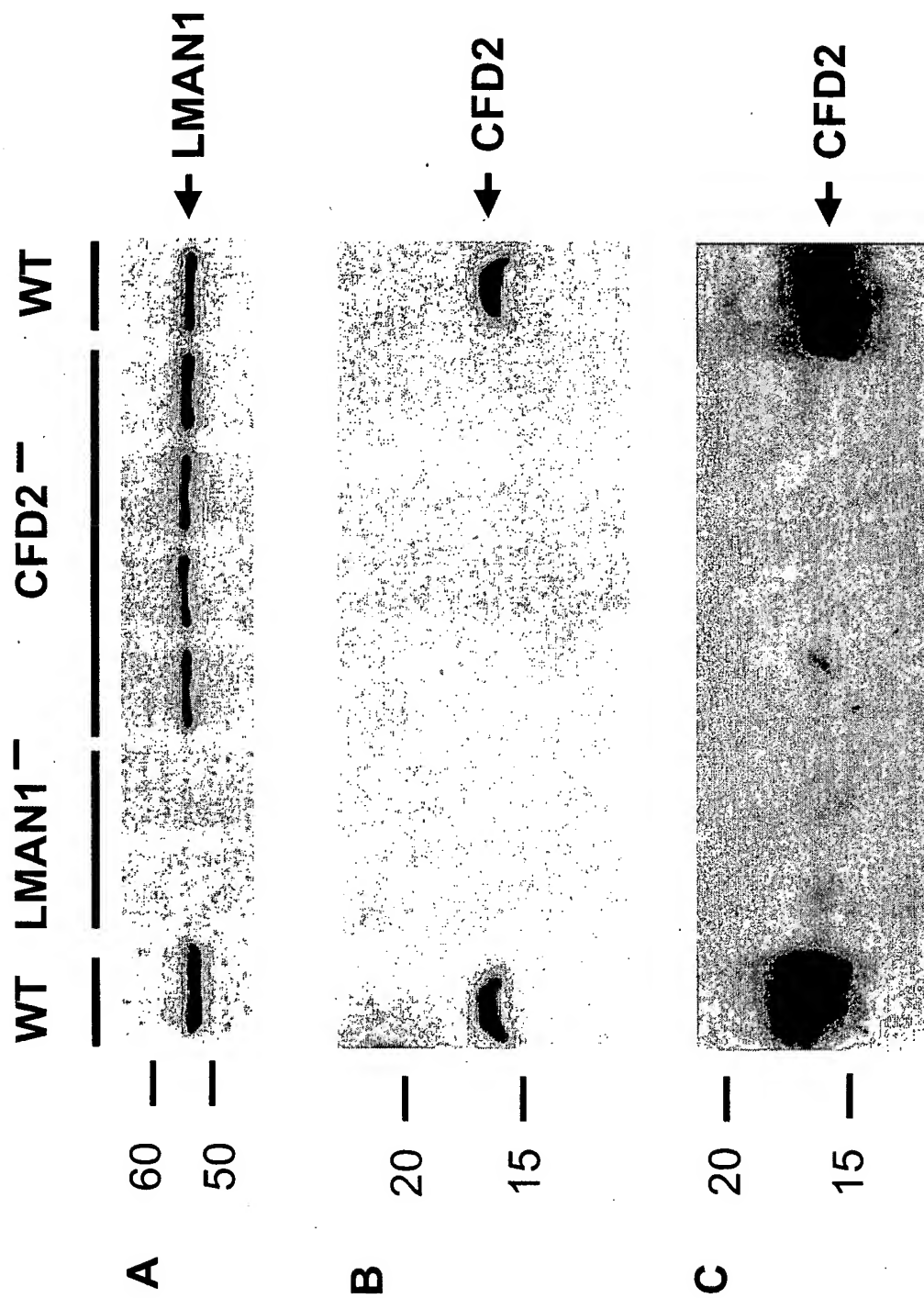
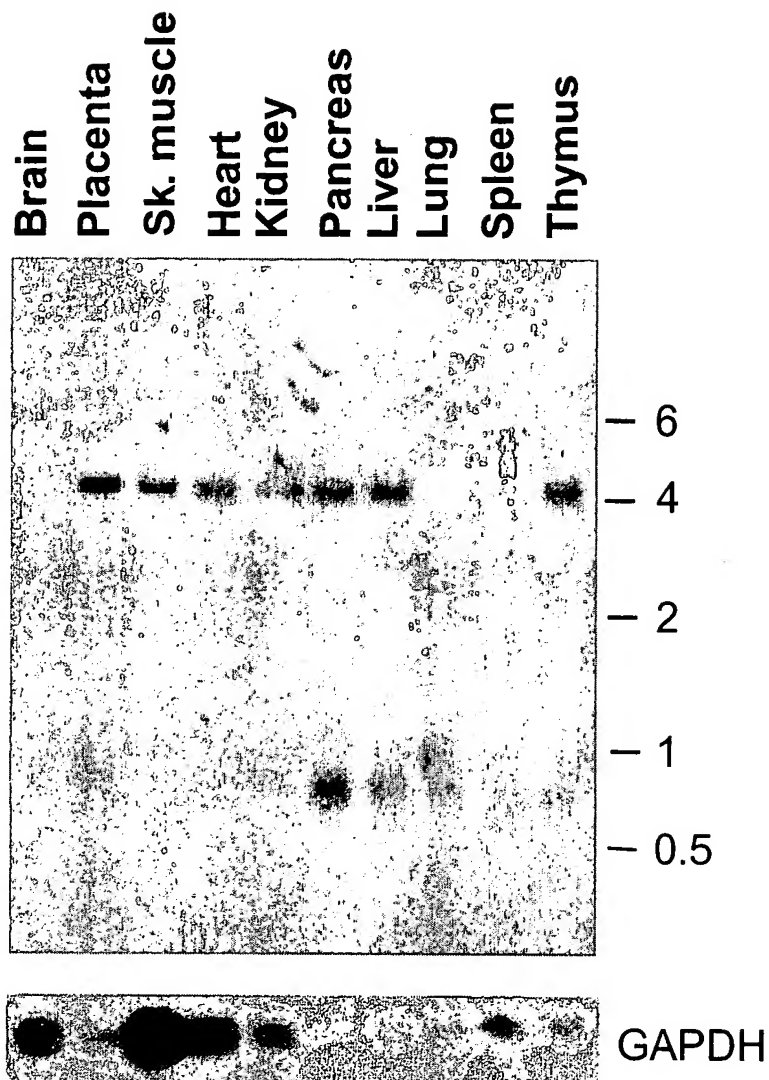


FIG 4

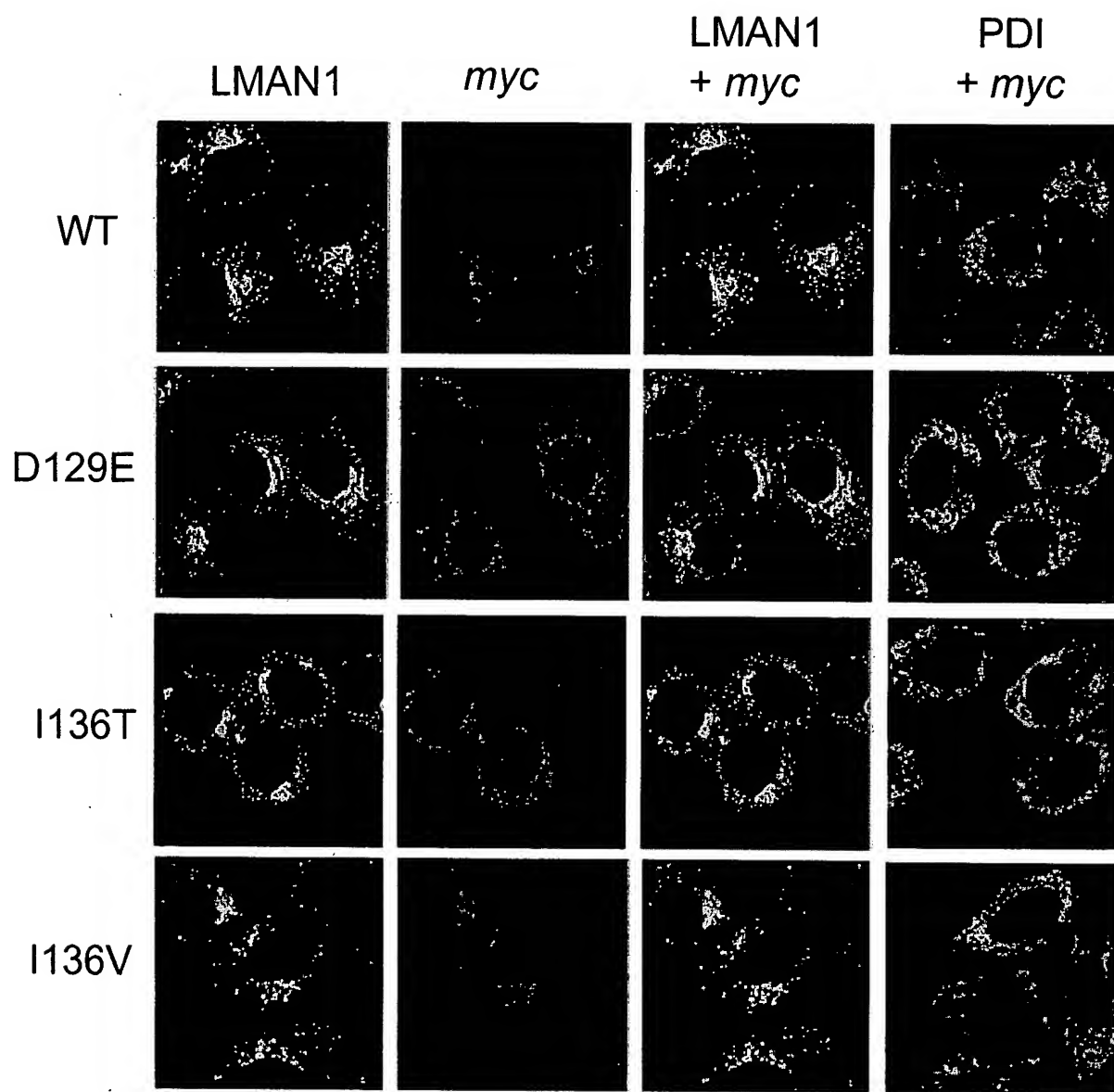
A



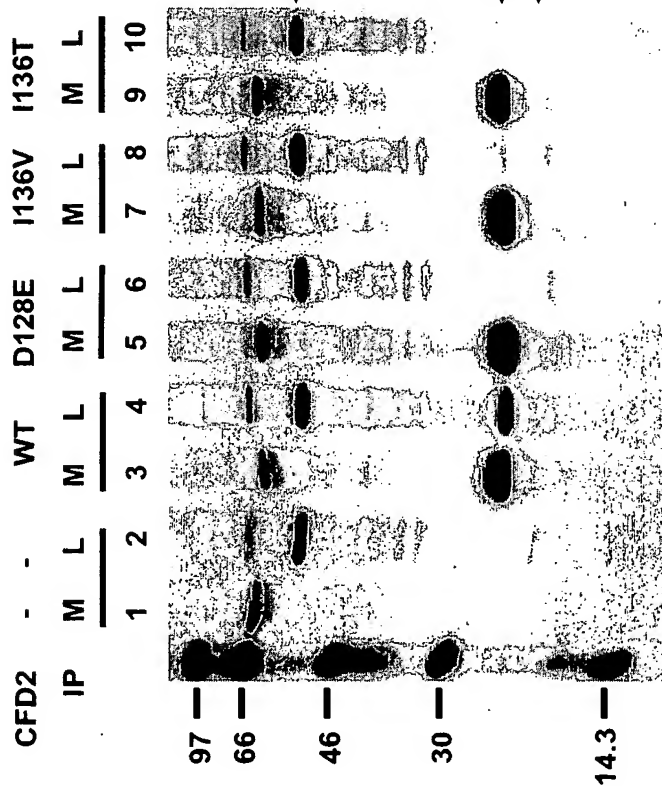
B

GAAGCCGAGGAAGAGCGTTTTGGGGACGGGGGCTGGTGAGGCTCACGTTG  
 GAGGGCTTCGCGTCTGCTTCGGAGACCGTAAGGATATTGATGACCATGAGA  
 M T M R

FIG 5



A



B

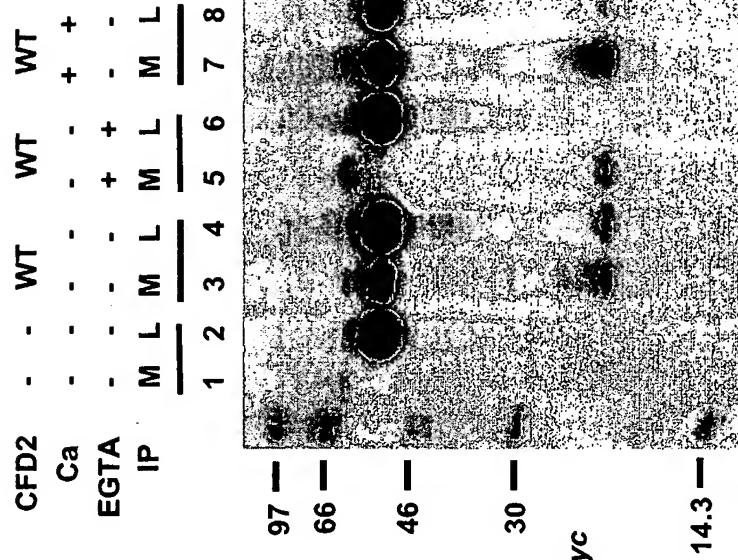


FIG 6

# FIGURE 7

Full-length cDNA/mRNA (gene)

GGGCGAAGCCGAGGAAGAGCGTTTTTGGGGACGGGGGCTGGTGAGGCTCACGTTGGAGGGCTTCGCGTCTGC  
TTCGGAGACCGTAAGGATATTGATGACCATGAGATCCCTGCTCAGAACCCCTTCTGTGTGGCCTGCTCT  
GGGCCTTTTGTGCCCCAGGCGCCAGGGCTGAGGAGCCTGCAGCCAGCTTCTCCCAACCCGGCAGCATGGGC  
CTGGATAAGAACACAGTGCACGACCAAGAGCATATCATGGAGCATCTAGAAGGTGTCATCAACAAACCAGA  
GGCGGAGATGTGCGCCACAAGAATTGCAGCTCCATTACTTCAAAATGCATGATTATGATGGCAATAATTTGC  
TTGATGGCTTAGAACTCTCCACAGCCATCACTCATGTCCATAAGGAGGAAGGGAGTGAACAGGCACCACTA  
ATGAGTGAAGATGAAGTGAATTAACATAATAGATGGTGTTTTGAGAGATGATGACAAGAACAATGATGGATA  
CATTGACTATGCTGAATTTGCAAAATCACTGCAGTAGATGTTATTTGGCCATCTCCTGGTTATATACAAAT  
GTGACCCGTGATAATGTGATTGAACACTTTAGTAATGCAAAATAACTCATTTCCAACTACTGCTGCAGCAT  
TTTGGTAAAAACCTGTAGCGATTTCGTTACACTGGGGTGAGAAGAGATAAGAGAAAATGAAAAGAGAGAAA  
TGGGACATCTAATAGTCCCTAAGTGCTATTAAATACCTTATTGGACAAGGGCTTGCTTCAAGCATCTGTAT  
TAGTCTGTATTAAATGCTGCTGATAAAGACGTACCCGAGACTGGGAAGAAAAAGAGGTTTACTTGGACTTAC  
AGTTCCACATGGCTGGGGAGGCCTCAGAATCATGGCGGGAGGTGAAAGGCACTTCTTACATGGCAGCAAGA  
GAAAATGAGGAAGAAGCAAAAGTGGAACCCCTGATAAGCCATCAGATCTTGTGAACTTATTCACTATCA  
CAAGAATAGCATGGGAAAGACTGGCCCCCATGATTCAATTACCTCCCCCTGGGTCTCTCCACAACACGTG  
GGAATTTCTGGTAGATAACAATTTCAAGTTGAGATTTGGGTGGGGACATAGCCAAACCATATCATTCTACCCC  
TGGCCCCCTCAAATCTCATGTCTCTCACTATTCAAACCAATCATGCGCTTCCCTAACAGTCCCCCAAAGTCTT  
AACTCTTTTTCAGCATTAACGCAAAAATCCACAGTCCAAAGTCTCATCTGAGACAAGGCAAGTCCCTTCAC  
CTATGAGCCTGTAAAATCAAAAAGCAAGCTAGTTACTTCTTAGATACCAACAGGGGTACAGGTATTGATTAA  
AGACGGCTGTTCCAAATGGGAGAAAATTGGCCAAAATAAAGGGGTACAGGGCCCATGCAAGTCCGAAATCC  
AGCAGGGCTGTCAAATTTTAAAGTTCCAGAATAATCTCCTTTGACTCCAGGTCTCACATCCAGGTCATACT  
GATGCAAGAAGTGGGTTCCCATGGTCTTGGGCAGCTCTGCCCTGTGGCTTTGTAGGGTACAGCCTCCCTC  
CTGGCTGCTTTACGGCTGTTGTTCAGTGCTGCGGCTTTTCAGGTGCACGGTGCAGCTGTTGGTGGAT  
CTACCATTCTGGGGTCTGGAGGACGGTGGCCCTCTTCTCACAGCTCCACTAGGCAGTGCCCCAGTAGGGAC  
TCTGTGTGGGGGCTCCCAACACCATTTCCCTTCTGCACTGCCCTAGCAGAGGTTCTCTCCCTGCCGCTG  
AGAGGGCTCTCCCTGTCAGCAACGTTTGCTGGGCATTGAGGCATTTCCATACATCTTCTGAAAAGTAG  
GCGGAGGTTTCCAAATCTCAATTCTTGACTTCTGTGCACCTGCAGGCTTAACAGCACATAGAAGCTGCCAA  
GGCTTGGGGCTTCCACTCTGAAGCCACAGCCCCGAGCTGTATGTTGGCCCCCTTTCAGCCATGGCTGGAGTGG  
CTGGGACACAAGACACCAAGTCCCTAGGCTGCACACACATGTCAGGGGCTGCCCTGACATGGCCTGGAGAC  
ATTTTCCCCATGGTGTGGGGATTAACATTAGGCTCCTTGCTACTTATGCAAATTTCTGCAGCTGGCTTGA  
ATTTCTCCCCAGAAAATGGGTTTTTCTTTCTATTGCATAGTCAGGCTGCAAATTTCCAACTTTTATGCT  
TTGCTTCCCTTATTATTAAGGGAATGCCTTTAAAAGCACCAAGTACCTGTTGAACACTTTGCTGCTTAG  
AAATTTCTTCCGCTAGTTAACCTAAATCATCTCTCAAGTTCAAAGTTCCACAAATCCCTATGGAAGGGG  
CAAAATGCTGCCAGTCTCTTTGCTAAAACATAACAAGACTACCTTTACTCCAGTTCCCAACAGTTCTCTC  
ATCTTCATCTGAGGCCACCTCAGCCTGGACTTTGTGTTCATATTGCTATCAGCATTTGGGGCAAGGCCAT  
TCAACAAGTCTGTAGGAAGTTCCAAACTTTCCACATTTTCTGTTTTCTTCTGAGCCCTCCAAACTGTTTC  
CAGCCTCTGCCTGTTACCCAGTTCCAAAGTCACTTCCACATTTTGGGTATTTCTTCAGCAGGTCCCAATCT  
ACTGGTACCAATTTACTGTATTAGTCCGTTTTTCAGCTGCTGATAAAGACATAACCCGAGACTGGGAAGAAA  
AAGTGGTTTTAATTGGACTTAAAGTTCCACATGGCTGGGGAGGCCTCAGAATCATGGTGGGAGGCAAAAGAC  
ACTTCTTACATTGTGGCAAGAAAAAATGAGGAAGAAGCAAAAGCAGAAACCCCTGATAAACTGATCAGATC  
TCATGAGACTTATTCACTGTCACGAGAATAGCACGGGAAAGACTGGCCCCATGATTCAATTACCTCCCC  
TGGGTCTGTCCCAACACAGTGGGAATTCTGGGAGATACAATTCAAGTTGAGATTGTGGGGGGACACAAC  
CAACCATATCAGCATCCTTTCAAGAATATTAGATAATTGGAGCTGAGTACTCAGGAAGTTGACTGTAGTA  
GAATACTGCTAGTTTCTTAATTTTAATTCACATACCTGAAAAGTAAAACAACAGGCTTTGCCAAGTGGAT  
GCTTTTTCAGTAACAGTGAAAGTGAGTGAAATACCAATGTTTGCCCTGGTGGTTCTTATCTCTTCAGGCAAA  
CATGGTCAGTATTCTGTAAAAGTTCCCTTGCCCTAAATGATTACTTGTCTGGGCAAGTGAGATTTTATTAG  
GCTATTTCAAAGCCACAGCATAAGAATGTCAGCCTAGCCACAGAGTCTGAGATTCTGAGTTTCAGCCTAGCC  
ACAGAGTCTAAGATTCTGTATCCTCTGACATTTTGGAAATGATACACTACTGGCTTAAGTGATGACTCTTT  
CAGATTTTTCAGTATTTTATACAATACTGCCACATCCTTATACTTTATTGCTTTTCTGTCTTCTTCAACCT  
GGGAGAGACCCCTGAATTTGAGTGTGTTCTCTAATCAATAGTGGTTTAGCTTTCTTTTCTATTCTACTCGTT  
TCTAGGGTTTTTTATTGTCAGTTTAGGAATATTAGGAATGTCAGGACTTTATCAGCAGGGGTAAAAGTAC  
CACCTGGCCTAGCCTAAGTAGGAAGTGAAAAGATAATTCACCAACAATGATTAAATCAGATAGAAGTTCTA

GTCAAGAGGGATATTGTTGAAGTTACCTCTTTTAGCCTAGATACATGGATTCTTTTCAAATCAGGAAAGAT  
TAGAAAAGGAACCCAAAAAACCTTTAACAGTGTGAATCTTTATAGTATTTGAAAAATGAGAAGAAGCAGCA  
GATTGTAATTTGGTTTATTGGATGTGATGGACGTTCTGTAATAGAAAAACCTGAAACGATGATTGAATGGGA  
AAAAGAGACTACAAAATTTGTCGTAGGATGTATACAGACTTATTTTCTTTATTACAGTATTATAAGAAAAC  
ATATGTATTTGTAAAAATGGTTTCCTGTGTCAAGTATTTGTGCAGTCAGAGCTGACTTGTAACCTATTCTT  
GTAATAGCTCATTATTTTGAAGATTTATATATGATGAATTCTGGATATATGACCAATAAACTGATGAAG  
C



## FIGURE 8

Amino Acid sequence (protein)

MTMRSLLRTPFLCGLLWAFCAPGARAEPAASFSPGSMGLDKNTVHDQEHIMEHLEGVINK  
PEAEMSPQELQLHYFKMHDYDGNNLLDGLELSTAITHVHKEEGSEQAPLMSEDELINIIDGV  
LRDDDKNNDGYIDYAEFAKSLQ

## FIGURE 9

Full-length cDNA with translation

GGGCGAAGCCGAGGAAGAGCGTTTGGGGACGGGGCTGGTGAGGCTCACGTTGGAGGGCTTCGCGTCTGC  
TTCGGAGACCGTAAGGATATTGATGACCATGAGATCCCTGCTCAGAACCCCTTCCCTGTGTGGCCTGCTCT  
M T M R S L L R T P F L C G L L  
GGGCCTTTTGTGCCCCAGGCGCCAGGGCTGAGGAGCCTGCAGCCAGCTTCTCCCAACCCGGCAGCATGGGC  
W A F C A P G A R A E E P A A S F S Q P G S M G  
CTGGATAAGAACACAGTGCACGACCAAGAGCATATCATGGAGCATCTAGAAGGTGTCATCAACAAACCAGA  
L D K N T V H D Q E H I M E H L E G V I N K P E  
GGCGGAGATGTCGCCACAAGATTGCAGCTCCATTACTTCAAAATGCATGATTATGATGGCAATAATTGTC  
A E M S P Q E L Q L H Y F K M H D Y D G N N L  
TTGATGGCTTAGAACTCTCCACAGCCATCACTCATGTCCATAAGGAGGAAGGGAGTGAACAGGCACCCTA  
L D G L E L S T A I T H V H K E E G S E Q A P L  
ATGAGTGAAGATGAAGTGAATTAACATAATAGATGGTGTGTTTGGAGAGATGATGACAAGAACAATGATGGATA  
M S E D E L I N I I D G V L R D D D K N N D G Y  
CATTGACTATGCTGAATTTGCAAAATCACTGCAGTAGATGTTATTTGGCCATCTCCTGGTTATATACAAAT  
I D Y A E F A K S L Q  
GTGACCCGTGATAATGTGATTGAACACTTTAGTAATGCAAAATAACTCATTTCCTCAACTACTGCTGCAGCAT  
TTTGGTAAAAACCTGTAGCGATTCTGTTACACTGGGGTGAGAAGAGATAAGAGAAATGAAAGAGAAGAGAAA  
TGGGACATCTAATAGTCCCTAAGTGCTATTAAATACCTTATTTGGACAAGGGCTTGCTTCAAGCATCTGTAT  
TAGTCTGTATTAAATGCTGCTGATAAAGACGTACCCGAGACTGGGAAGAAAAAGAGGTTTACTTTGGACTTAC  
AGTTCCACATGGCTGGGGAGGCCCTCAGAATCATGGCGGGAGGTGAAAGGCACCTTCTTACATGGCAGCAAGA  
GAAATGAGGAAGAAGCAAAAGTGGAACCCCTGATAAGCCATCAGATCTTGTGAAACTTATTCACATATCA  
CAAGAATAGCATGGGAAAGACTGGCCCCCATGATTCAATTACCTCCCTTGGGTCTCTCCCAACACAGTG  
GGAATTCTGGTAGATAACAATTTCAAGTTGAGATTTGGGTGGGGACATAGCCAAACCATATCATTCTACCCC  
TGGCCCCCTCCAAATCTCATGTCTCACTATTCAAAACCAATCATGCCTTCCCTAACAGTCCCCCAAAGTCTT  
AACTCTTTTCAGCATTAACGCAAAAATCCACAGTCCAAAGTCTCATCTGAGACAAGGCAAGTCCCTTCCAC  
CTATGAGCCTGTAAAATCAAAAGCAAGCTAGTTACTTCTTAGATACCAACAGGGGTACAGGTATTGATTAA  
AGACGGCTGTTCCAAATGGGAGAAATTTGGCCAAAATAAAGGGGTACAGGGCCCATGCAAGTCCGAAATCC  
AGCAGGGCTGTCAAATTTTAAAGTTCCAGAATAATCTCCTTTGACTCCAGGTCTCACATCCAGGTCTACT  
GATGCAAGAAGTGGGTTCCTCATGGTCTTGGGCAGCTCTGCCCCCTGTGGCTTTGTAGGGTACAGCCTCCCTC  
CTGGCTGCTTTTACGGCTGTGTTTCACTGCTGCGGCTTTTCCAGGTGCACGGTGCAGCTGTTGGTGGAT  
CTACCATTCTGGGGTCTGGAGGACGGTGGCCCTTCTTCAAGCTCCACTAGGCAGTCCCCAGTGGGAC  
TCTGTGTGGGGCTCCCAACACCATTTCCCTTCTGCATGCCCCTAGCAGAGGTCTCTCCCCCTGCCGCTG  
AGAGGGCCTCTCCCCCTGCAGCAAACGTTTGCCTGGGCATTGAGGCATTTCCATACATCTTCTGAAAACCTAG  
GCGGAGGTTTCCAAATCTCAATTTCTGACTTCTGTGCACCTGCAGGCTTAACAGCACATAGAAGCTGCCAA  
GGCTTGGGGCTTCCACTCTGAAGCCACAGCCGAGCTGTATGTTGGCCCCCTTTCAGCCATGGCTGGAGTGG  
CTGGGACACAAGACACCAAGTCCCTAGGCTGCACACACATGTCAGGGGCTGCCCTGACATGGCTGGAGAC  
ATTTTCCCCATGGTGTGTTGGGGATTAACATTAGGCTCCTTGCTACTTATGCAAATTTCTGCAGCTGGCTTGA  
ATTTCTCCCCAGAAAATGGGTTTTTCTTTTCTATTGCATAGTCAGGCTGCAAATTTCCAAACTTTTATGCT  
TTGCTTCCCTTATTTATAAGGGAATGCCTTTAAAGCACCCAAGTCACCTGTTGAACACTTTGCTGCTTAG  
AAATTTCTTCCGCCAGTTAACCATAATCATCTCTCAAGTTCAAAGTTCCACAAATCCCTATGGAAGGGG  
CAAAATGCTGCCAGTCTCTTTGCTAAAACATAACAAGAGTCACCTTTACTCCAGTTCCCAACAAGTTCCTC  
ATCTTCATCTGAGGCCACCTCAGCCTGGACTTTGTTGTCCATATTGCTATCAGCATTTGGGGCAAAGCCAT  
TCAACAAGTCTGTAGGAAGTTCCAAACTTTCCACATTTTCCCTGTTTTCTTCTGAGCCCTCCAAACTGTTT  
CAGCCTCTGCCTGTTACCCAGTTCCAAAGTCACTTCCACATTTTGGGTATTTCTTTCAGCAGGTCCCAATCT  
ACTGGTACCAATTTACTGTATTAGTCCGTTTTTACGCTGCTGATAAAGACATACCCGAGACTGGGAAGAAA  
AAGTGGTTTAAATTGGACTTAAAGTTCCACATGGCTGGGGAGGCCTCAGAATCATGGTGGGAGGCAAAAGAC  
ACTTCTTACATTGTGGCAAGAAAAAATGAGGAAGAAGCAAAAGCAGAAACCCCTGATAAACTGATCAGATC  
TCATGAGACTTATTCATGTACAGAGAATAGCACGGGAAAGACTGGCCCCCATGATTCAATTACCTCCCC  
TGGGTCTGTCCCAACACAGTGGGAATTCTGGGAGATAACAATCAAGTTGAGATTTGTGGGGGACACAAC  
CAAAACCATATCAGCATCCTTTCAAGAATATTAGATAATTGGAGCTGAGTACTCAGGAACCTGGACTGTAGTA  
GAATACTGCTAGTTTCTTAATTTTAATTCACATCACCTGAAAAGTAAAACAACAGGCCTTTGCCAAGTGAT  
GCTTTTCAGTAACAGTGAAGTGGAGTGAATACCAATGTTTGGCCCTGGTGGTTCCTATCTCTCAGGCAAA

CATGGTCAGTATTCTGTAAAGTTCCCCTGGCCTAAATGATTACTTGCTCTGGGCAAGTGGATATTTATTAG  
GCTATTTCAAAGCCACAGCATAAGAATGTCAGCCTAGCCACAGAGTCTGAGATTCTGAGTTCAGCCTAGCC  
ACAGAGTCTAAGATTCTGTATCCTCTGACATTTTGGAAATGATACACTACTGGCTTAAGTGATGACTCTTT  
CAGATTTTCAGTATTTTATACAACACTACTGCCACATCCTTATACTTTATTGCTTTTCTGTCTTCTTCAACCT  
GGGAGAGACCCTGAATTTGAGTGTGTTCTCTAATCAATAGTGGTTTAGCTTTCTTTTCTATTTCACTCGTT  
TCTAGGGTTTTTTTATTTGCAGTTTAGGAACTATTAGGAATGTCAGGACTTTATCAGCAGGGGTAAACTAC  
CACCTGGCCTAGCCTAAGTAGGAAGTGAAAAGATAATTCACCAACAATGATTAATCAGATAGAAGTTCTA  
GTCAAGAGGGATATTGTTGAAGTTACCTCTTTTAGCCTAGATACATGGATTCTTTTCAAATCAGGAAAGAT  
TAGAAAAGGAACCCAAAAAACCTTTAACAGTGTGAATCTTTATAGTATTTGAAAATGAGAAGAAGCAGCA  
GATTGTAATTTGGTTTATTGGATGTGATGGACGTTCTGTAATAGAAAACCTGAAACGATGATTGAATGGGA  
AAAAGAGACTACAAAATTTGTCGTAGGATGTATACAGACTTATTTCTTTATTACAGTATTATAAGAAAAC  
ATATGTATTTGTAAAAATGGTTTCCTGTGTCAAGTATTTGTGCAGTCAGAGCTGACTTGTAACCTATTCTT  
GTAATAGCTCATTATTTTGAAAGATTATATATGATGAATTCTGGATATATGACCAATAAACTGATGAAG  
CAAAA

# FIGURE 10

Genomic sequence (exons are underlined)

```

1          11          21          31          41          51
AAGCAATACTAAAAGGTGTAAATTGAAATCTTATTTTCACCCCTATTCTCATCCACTCTG
61          71          81          91          101         111
GAATCCCCTACATAGGTAAAACATTGTCTTGAGACAATTCAAAACAGCTGAGGAAAGAGA
121         131         141         151         161         171
TGCCACCTAGAGGCCATTCTGGTATCTTGGGATGGCCGTCCTATCTCCTGATAAAGCCAC
181         191         201         211         221         231
CTCTCTGTCTCTACTTGTACTAGTTTCAACCTGAGTACACAAAGTAAATGGGGTATTTCA
241         251         261         271         281         291
GCAAGGTTCCAAGTTATGAGACTCCTGGTTGCAGGTAAAGAGATCCTCTCTTACCTAGTC
301         311         321         331         341         351
GTTACTTTCTTTAATCTCTGCTTTCAAATCAGTTATTTCCAACGTAGAGTTGCCCTTCTC
361         371         381         391         401         411
TTGAAGGAGTCTGCTGAAAAGCTACTAAAAAAGGCAACACTCACTAATGTTCCATATTGCT
421         431         441         451         461         471
CGTGAGATTTCTCCAAAAATATAGCATTGGTTGGCATGTGGCCCTATATCCAAGGTCCAGC
481         491         501         511         521         531
AAGTGACAGTTTCACTACGGCTTATAAGGGTCACCAACTTTCCAGTTTGACATACAGTCT
541         551         561         571         581         591
TTTAACACTGGCTACCTTAACCTCCAGTTAGCCAATTCATATTTTAGTGTCTTGTTTTTT
601         611         621         631         641         651
AGCATCCTGCTTCTGGTACCAAATTATTTGCCTGTTAGGAATGGGTTCAGCTACAAGTTA
661         671         681         691         701         711
CAGAACACCCACCTATAAAATGGCTTAATCAAAGGTGGCTTCTCACTTATGGACTACAGT
721         731         741         751         761         771
AGGGCAAGAATGGAAGCAGGACGGTCAGTTAGGAAGCTCTCTCTCAAGTAGTCCAGCAGC
781         791         801         811         821         831
ATCATCTACTACTGGACTAGATGGTTTAGTGGAGGTGGAAGAAGTCAAAGACTCAGGAT
841         851         861         871         881         891
ACATTTTGTATAGCATCAACAGGCTTTGCTGAAGGATTTAAAGGTAAAGGGATGAGATAAA
901         911         921         931         941         951
TCAAAAACAGCTCGTAGAATTTTAGCTTGAACAACAGAATGAGTACCAGTGACATTTACT
961         971         981         991         1001        1011
AAAATGCACAAGACTGAGAGAGGTGCAGGTTTGGGGGTGAAAATCAAGATTTTGGGGGGA
1021        1031        1041        1051        1061        1071
CACATTAAGTTTGAGATGCCAGTCTGACATTCATATGGAGACATCAAGTAGGCAGTTATT
1081        1091        1101        1111        1121        1131
TACAGGAGCCAGGAATTACACAGAGAGGTCATTGTCAGAGAGACATATTTTGGAGTCATC
1141        1151        1161        1171        1181        1191
TATTTATAAATGGTATCTAAAGCACAGGACTAGGTAAACTCACATAGGGAGGGTGGATAG
1201        1211        1221        1231        1241        1251
AGAAGGTGACTCAGAACAGAAACCTGGACACTTTGATAATTATAGATTGAGAAGCCAATT
1261        1271        1281        1291        1301        1311
AAGAAGCCCAAGAAAGGATAATGAGTGAGGTAGCAGAAGGACCCAGAGTGTGTGGTGTCA
1321        1331        1341        1351        1361        1371
GAAAACAAGAGAAGAAAGTGTCTAAGTGAGAGTGGTTGGCTTTGATAAAACAGTGTTG
1381        1391        1401        1411        1421        1431
AGAGGGCAAGTAAAAATAAAACAGAGATCAAAGAGACCAGTATTTGCATGGAGATTG
1441        1451        1461        1471        1481        1491
CAGTTTTCAGTGGTATGGTGGGGGAGAAAATACAGCAAGTTTATATGTTGATGGGAATTAT
1501        1511        1521        1531        1541        1551
CTGGTAGAGAGGGAGTGACTGTAGATTCAAGAGAGACATAACACAGGATAACATCCATAG

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|  |      |      |      |      |      |
|--|------|------|------|------|------|
| 1561   | 1571 | 1581 | 1591 | 1601 | 1611 |
| GAAAAAAATGAAAGCACTGGCTAGAATGAGGACACTTTATCCATCTACCAGACACCAGCT   |      |      |      |      |      |
| 1621   | 1631 | 1641 | 1651 | 1661 | 1671 |
| TCTTGACACTTCATTTGTCTTATTTGTATCTCTAGTAGCTCCTAGTAGAGCGCCTAGTAC   |      |      |      |      |      |
| 1681   | 1691 | 1701 | 1711 | 1721 | 1731 |
| ATAGAAGATATTCAAGAAATGTTATTGAATGAATAAATGAACAAAGGGAGGGGTGGATGA   |      |      |      |      |      |
| 1741   | 1751 | 1761 | 1771 | 1781 | 1791 |
| ATGGATGAAGAGATGGATGAATGGCAGATGCAGGGTAGAAGGAGGAACTAGATCAAACCTA  |      |      |      |      |      |
| 1801   | 1811 | 1821 | 1831 | 1841 | 1851 |
| ATCCAAAGTTCAGAGTAAGGAAAGAAGAAATGGGTCTTGAATTAATAGGGTTTCCTCAAAA  |      |      |      |      |      |
| 1861   | 1871 | 1881 | 1891 | 1901 | 1911 |
| CTTAGGGATTCTTTGTCCCGCGCGGTGGCTCACCCCTGTAATCCCAGCACTTTGGGAGG    |      |      |      |      |      |
| 1921   | 1931 | 1941 | 1951 | 1961 | 1971 |
| CGGAGGTGGTGGGAGGATTGCTTGAACCCAGGAGTTCGAGACGAGCTGGGCACCATGGAG   |      |      |      |      |      |
| 1981   | 1991 | 2001 | 2011 | 2021 | 2031 |
| ACTCTTTTCTTTAAAAAAGAAAAAAATTAGGGATTATGGGATTTTCTCTGGGATGG       |      |      |      |      |      |
| 2041   | 2051 | 2061 | 2071 | 2081 | 2091 |
| GGTGGCAGATTTCAATCTCAGATGAAGGTGGGAAAAGGAATGAGACCGTCAATGGCAGTG   |      |      |      |      |      |
| 2101   | 2111 | 2121 | 2131 | 2141 | 2151 |
| GCGTTAGGCAACTTTCAAGGCATCTAACTACTTAGCCACTTTCTTTGTCTTTCTGTCCG    |      |      |      |      |      |
| 2161   | 2171 | 2181 | 2191 | 2201 | 2211 |
| GACCCAGGCTCATTTGAAAAACGATTATGTACCTTTATGGACAGAAATGGGAGAAGGGCT   |      |      |      |      |      |
| 2221   | 2231 | 2241 | 2251 | 2261 | 2271 |
| TTAAAAAAACGACCGTCCTGCCGGGAGTGGTGGCTCACGCCTGTAATCCCAGCACTTTG    |      |      |      |      |      |
| 2281   | 2291 | 2301 | 2311 | 2321 | 2331 |
| GGAGGCTGAGGCGGGAGGATCAAGAGGTCAGCAGTTAGAGACCAGCCTGGCCAACACGGT   |      |      |      |      |      |
| 2341   | 2351 | 2361 | 2371 | 2381 | 2391 |
| GAAACCCCGTCTCTACTAAAAATACAAAAATTAGCCGGGCAAGGTGGCACGCGCCTGTAA   |      |      |      |      |      |
| 2401   | 2411 | 2421 | 2431 | 2441 | 2451 |
| TCCCAGCTACTCGGGAGGCTGAGGTAGGAGAAGAGCTTGAACCTGGGAGGCGGAGGTTGC   |      |      |      |      |      |
| 2461   | 2471 | 2481 | 2491 | 2501 | 2511 |
| AGTGAGCCGAGATCCCACCACTGCACTCCAGCCTGGGACAGAGCGAGACTCCGTCTCAAA   |      |      |      |      |      |
| 2521   | 2531 | 2541 | 2551 | 2561 | 2571 |
| ACAAAACAAAACAAAACAAAACAAAACGACCGTCCTACACTCATTTATCCATCAGGT      |      |      |      |      |      |
| 2581   | 2591 | 2601 | 2611 | 2621 | 2631 |
| CAATGGATACTTACTGAATGTTAATCTTGTATAGGAGCACAGGTGTAAGGGCAGGATTAT   |      |      |      |      |      |
| 2641   | 2651 | 2661 | 2671 | 2681 | 2691 |
| ACAGGGATGAATTCGATACAGGGATGATGTATTTCGTTTCCCTATTTGTTTCATGAGTCTGT |      |      |      |      |      |
| 2701   | 2711 | 2721 | 2731 | 2741 | 2751 |
| TTTTAAGTAATCTGTCTCTCTTGAATGTCAAAAGCTGCTGATTTTCACGAACGGTACATG   |      |      |      |      |      |
| 2761   | 2771 | 2781 | 2791 | 2801 | 2811 |
| GAAGATGGTATTTGAACTGGGTGCGATAGTCTTGCTGGGACTCCCGTGAAGCGAACGGG    |      |      |      |      |      |
| 2821   | 2831 | 2841 | 2851 | 2861 | 2871 |
| GACAGCGGCTGCCGAGCTTGTGCAGTGGAGCTGGCAGACGCTGGAAGCAGGCCAATCTT    |      |      |      |      |      |
| 2881   | 2891 | 2901 | 2911 | 2921 | 2931 |
| GAAACGTAGGGTCCAAGGCCGGCTCCAGCGTGTGTGGTCGTTTCATCAAGAAGGAATTA    |      |      |      |      |      |
| 2941   | 2951 | 2961 | 2971 | 2981 | 2991 |
| GCATTCCCTATTATCTTTCTTTCCCAACTTGCAGCAGGACGAACCAAGAGACCTGAACCAAG |      |      |      |      |      |
| 3001   | 3011 | 3021 | 3031 | 3041 | 3051 |
| AGCCCTGTATAGGAGGGGGTGAGCGGAGTTGGGAGCCAGCTTTGGGGTCCGCCCCATCCG   |      |      |      |      |      |
| 3061   | 3071 | 3081 | 3091 | 3101 | 3111 |
| GATCCGCCATCTACGTCGCCCCGTGGAACCTACGTTCTGAGGGCTTCCGGCGTTGCCTAG   |      |      |      |      |      |
| 3121   | 3131 | 3141 | 3151 | 3161 | 3171 |
| CAACTGCCGGGCCCCCTAGGGCGTCCAGCGGCCCAACTGGAGTGGAGCCGAGTGTGCGCCCT |      |      |      |      |      |
| 3181   | 3191 | 3201 | 3211 | 3221 | 3231 |
| TGGGAAAGCAGGTAGAAGAACTGCGTCAGTCCCGCCAGTGCTGGGCCCCGGGCCGATTACA  |      |      |      |      |      |
| 3241   | 3251 | 3261 | 3271 | 3281 | 3291 |

CGTGGACTCACGCGAGCCGTCCTCACAGCCCCGCCGCCAGCGGGAGGGGCCCCGGCGGC  
 3301 3311 3321 3331 3341 3351  
 GCCAATGGGCGGCGGCAGGGAGCGCGCTCCGGGCAGGTTCGGGGGGGGGGGGGGGGGGCGGG  
 3361 3371 3381 3391 3401 3411  
 GCGAAGCCGAGGAAGAGCGTTTTGGGGACGGGGGGCTGGGTGAGGCTCACGTTGGAGGGCTT  
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 3601 3611 3621 3631 3641 3651  
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 3961 3971 3981 3991 4001 4011  
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 4261 4271 4281 4291 4301 4311  
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|   |      |      |      |      |      |
|---|------|------|------|------|------|
| 4981  | 4991 | 5001 | 5011 | 5021 | 5031 |
| GAAGTTCCAGCTTAGGCTAGATCCGCTGTGGGATAGGGAACAATACACCTAGGTGCCAAG  |      |      |      |      |      |
| 5041  | 5051 | 5061 | 5071 | 5081 | 5091 |
| ACTCACTTCCCTGATTCAGCGATGAGCCAGGTCAGCTCAGCAGAGATCAGTAAGGTAAAT  |      |      |      |      |      |
| 5101  | 5111 | 5121 | 5131 | 5141 | 5151 |
| GAGAGCCAGAGGAGAGAGGGTCTGACTCTCAGAGAGGGAGGAAAAGAGAAAAATGGAAA   |      |      |      |      |      |
| 5161  | 5171 | 5181 | 5191 | 5201 | 5211 |
| AGGAGAACAACCTGTGATCGTATGTTTCAGGTCAAATGAGTGTGAGAGGCTACAGACTGAG |      |      |      |      |      |
| 5221  | 5231 | 5241 | 5251 | 5261 | 5271 |
| GTCGGATGAGAGAGCAATTGGTCTTGGCTGGAAGAATCCTGAGGTGACATTTGAACCTGT  |      |      |      |      |      |
| 5281  | 5291 | 5301 | 5311 | 5321 | 5331 |
| CCTGGAAGGAAGTTGGAGATGGACAGATGGAACCAGTAGGAGCGGAGGCTGTGGTACAGG  |      |      |      |      |      |
| 5341  | 5351 | 5361 | 5371 | 5381 | 5391 |
| AAGAGGCTGGCAGAGCAGGAGGGGAGCACTGTGACAGCCAAGGCACTGGGAGGCGCACTG  |      |      |      |      |      |
| 5401  | 5411 | 5421 | 5431 | 5441 | 5451 |
| CTCCTGATGGTCCAGCACTGCCCTCCCAGGACTGAGGCTGCGCCTTGTGAGGGCTGTCTC  |      |      |      |      |      |
| 5461  | 5471 | 5481 | 5491 | 5501 | 5511 |
| AAGGTATGGGTGTGCCCCGAAGTCCCTTTGCAGAAATTTCTCCTCCGTTGGGTTTTTCT   |      |      |      |      |      |
| 5521  | 5531 | 5541 | 5551 | 5561 | 5571 |
| TCAGCCTGGCCTTTATAATTTCCCTAAAGAAGGCCAGTGAGCTGGGGCTTATCTTCAGGCT |      |      |      |      |      |
| 5581  | 5591 | 5601 | 5611 | 5621 | 5631 |
| GTTAGCCCATGGCCTTGAGCTAAGTAGTTAGAGCATGGATGATGCAACCTGTTATTTGGG  |      |      |      |      |      |
| 5641  | 5651 | 5661 | 5671 | 5681 | 5691 |
| TAGAGGGAGTTGCTTATGCTTTCTCTTGACTGTCAGCAGTTTAATTTGTCAGGTGGCAGT  |      |      |      |      |      |
| 5701  | 5711 | 5721 | 5731 | 5741 | 5751 |
| TAGATTCCTGTTTTCTATCTTTCCCTCCCTCGCCTGCCTTCTTTCTTTCTTCTCTCT     |      |      |      |      |      |
| 5761  | 5771 | 5781 | 5791 | 5801 | 5811 |
| CTCTCTCTCTTTTCTAATTAGAGAGGGAGTCTCACCATGTTGTCCAGGCTGGTCTTGAA   |      |      |      |      |      |
| 5821  | 5831 | 5841 | 5851 | 5861 | 5871 |
| CTCCTGGGCTCAAGTGATTCACTTGCCCTCAGCCTCTCAAAGTATTGAGATTACAGGCATA |      |      |      |      |      |
| 5881  | 5891 | 5901 | 5911 | 5921 | 5931 |
| AGCCACCATGCCCAGCCCGATTCCCTGTTTTTCAGTGTACCACTTGAGGAATTTTTTTTC  |      |      |      |      |      |
| 5941  | 5951 | 5961 | 5971 | 5981 | 5991 |
| TTTATGTTTATCGATTGGCTTTTGTGTCATTCCAATGATTAGAAACCTGCAACAGCAAA   |      |      |      |      |      |
| 6001  | 6011 | 6021 | 6031 | 6041 | 6051 |
| CCAAAATGAGACAAAGTTCAAAATCAGTGATTCTTGGCCTTTATCCCACCTCCCTTAAAGA |      |      |      |      |      |
| 6061  | 6071 | 6081 | 6091 | 6101 | 6111 |
| AGGGATATTTTGGACTCATAGTTACTACATGATTAATCACTTGGTTGCTTTTTTGGTGTTA |      |      |      |      |      |
| 6121  | 6131 | 6141 | 6151 | 6161 | 6171 |
| TCTAAATAGAATTTCCCCCACCCTCAACACACACACCAAATTGATATACTAAGCATCC    |      |      |      |      |      |
| 6181  | 6191 | 6201 | 6211 | 6221 | 6231 |
| AATCACATAGTTGGAGGAAATGGTGCCATGAGTTCCATGATAGATATCTCCAAAAGAAAA  |      |      |      |      |      |
| 6241  | 6251 | 6261 | 6271 | 6281 | 6291 |
| GTTTCATCTTCAGTTACAGTGACATTAAAAATTGGCAGCATATCTGCAAAGGTGGTAATC  |      |      |      |      |      |
| 6301  | 6311 | 6321 | 6331 | 6341 | 6351 |
| CCCCCAGCTCCCCAAGGACCATGGCACACAGGCTAAGAACCAGCAGCTTCTGTTCCAGGC  |      |      |      |      |      |
| 6361  | 6371 | 6381 | 6391 | 6401 | 6411 |
| ACTGTGCCTGATACTGGGAATGTGGATTTCAGTCCAAGTCCTCTTAAAGCCCATCCAGCAA |      |      |      |      |      |
| 6421  | 6431 | 6441 | 6451 | 6461 | 6471 |
| GGGGCACTGACAAGTAATCAGGCAGTTTTTCAAGAATTCATTACACACAAGAAAACAAA   |      |      |      |      |      |
| 6481  | 6491 | 6501 | 6511 | 6521 | 6531 |
| AGAAAAAAAAGAATTAATTTGCAGCTGTCATCAGCTGTGGACGGGAGCCTTCTGAAGGGA  |      |      |      |      |      |
| 6541  | 6551 | 6561 | 6571 | 6581 | 6591 |
| AGCACTTGGGAGCCTGCAGGACGAATACCTACACCAGACTTGGAAATTGAAAAGACCTCAC |      |      |      |      |      |
| 6601  | 6611 | 6621 | 6631 | 6641 | 6651 |
| TGGAGAAAGAGACATTTGATGTAAATGAGTCTGAAAGGCTTGGGAGGAGCTTGATTCCCT  |      |      |      |      |      |
| 6661  | 6671 | 6681 | 6691 | 6701 | 6711 |

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6721 6731 6741 6751 6761 6771  
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6781 6791 6801 6811 6821 6831  
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6841 6851 6861 6871 6881 6891  
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6961 6971 6981 6991 7001 7011  
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7381 7391 7401 7411 7421 7431  
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8341 8351 8361 8371 8381 8391  
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|  |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|
| 8401   | 8411  | 8421  | 8431  | 8441  | 8451  |
| CCTGGCCTATCCTGGAAGTTAGACATTCCCAGTGACTATTGTCCCTTTAAGGAGGGGGC    |       |       |       |       |       |
| 8461   | 8471  | 8481  | 8491  | 8501  | 8511  |
| CATGGGAAGCAATACTGGTAATGGGAAAAACGGATTTGGGAAATTTTCTAAGTGTGTGA    |       |       |       |       |       |
| 8521   | 8531  | 8541  | 8551  | 8561  | 8571  |
| GGGTGGCATACTCACACTTTCAGGGTTCTGCCCTGAGAGCCTTTTAGGATGGGTAAGAGG   |       |       |       |       |       |
| 8581   | 8591  | 8601  | 8611  | 8621  | 8631  |
| GACTATAACACCTCTACCTCTCAGCCCCAGGCACAAAGACAGCTACAGCTTCTGAGCTGA   |       |       |       |       |       |
| 8641   | 8651  | 8661  | 8671  | 8681  | 8691  |
| GCCCTGTGTGTAGCATGTAAAGGGGATGACCAGTGCCTTATGGTTTGTCTTTACCACTGC   |       |       |       |       |       |
| 8701   | 8711  | 8721  | 8731  | 8741  | 8751  |
| TGGTTTGGGGCTGTGGACTACAATTGACCTGTTAGAAATCCCTGGCCTTGTATCTAGCA    |       |       |       |       |       |
| 8761   | 8771  | 8781  | 8791  | 8801  | 8811  |
| GAATCTGTTTTGCTGTGGGAAGTGAGTGTTCGGTCAGGTCTTTTGTTTTGTATGTAG      |       |       |       |       |       |
| 8821   | 8831  | 8841  | 8851  | 8861  | 8871  |
| GTCACCTGGCTGTCCTTCACCTTCCTTTTGGAGTCACTCTGTCAGCCCTAGGACAGACC    |       |       |       |       |       |
| 8881   | 8891  | 8901  | 8911  | 8921  | 8931  |
| AAGACTTTCCATTGAATCAACAATTATTAAAGGCCTGCCTGACCCTTGGCGGGTAATACT   |       |       |       |       |       |
| 8941   | 8951  | 8961  | 8971  | 8981  | 8991  |
| GGTGGGGTTAAAGTTCTCCCTGCCCTCCAAGAGCTTGCTCTGTAGCTGACTGTCATCTTA   |       |       |       |       |       |
| 9001   | 9011  | 9021  | 9031  | 9041  | 9051  |
| TTGACCACAATTCCAAGTGTGGCCAAACCTTGGGAGTTCCTGATGGCATCCTGATTTCTC   |       |       |       |       |       |
| 9061   | 9071  | 9081  | 9091  | 9101  | 9111  |
| TGTAACTTTTCTTTCCAGTGCCCGCTCACTGTAGTTACTTGCCACTGTTACCACCCAGGA   |       |       |       |       |       |
| 9121   | 9131  | 9141  | 9151  | 9161  | 9171  |
| GGTACAGAACCTTGTCCGCTGCCGAGACCTTGATCTGACCCGCCTTACCACTCCCTTGG    |       |       |       |       |       |
| 9181   | 9191  | 9201  | 9211  | 9221  | 9231  |
| CTACCATGCTCCTGCCTCTAGTCTTGCTTTTGCCACTTCATGCCTTCCCCACTGTGCTGC   |       |       |       |       |       |
| 9241   | 9251  | 9261  | 9271  | 9281  | 9291  |
| CAGATGAGTCATTCTGAAACCAAGCTCTGATCTCACCTCCATTTCATGAATTGTAAGTGA   |       |       |       |       |       |
| 9301   | 9311  | 9321  | 9331  | 9341  | 9351  |
| CTCTCCTGTCTTTCTCTGAGGAGATGTCAAGCCCTGGCCTAGTGTGCAAAGCCCTGTCC    |       |       |       |       |       |
| 9361   | 9371  | 9381  | 9391  | 9401  | 9411  |
| AGTACAGCCTGTCTAGGCCTTGGAGCCACCTCTGTCTGTCTGCTTCTTACCCTCTAGGC    |       |       |       |       |       |
| 9421   | 9431  | 9441  | 9451  | 9461  | 9471  |
| TGCAGCCCAGCTGAACTACTTGTAGTTTCTTTCCCGCTTGTGGGCACCTGCCACTCTGCT   |       |       |       |       |       |
| 9481   | 9491  | 9501  | 9511  | 9521  | 9531  |
| CCCACCATTCCTGTGGTCCCTTCAGTCCCTGCATATCTGTCCAGGCCAGCTGAAGTGTCA   |       |       |       |       |       |
| 9541   | 9551  | 9561  | 9571  | 9581  | 9591  |
| CCAGCTCTATCAGCCTTCTCTGATTTTCCCTCCACTCGGAGGAGATTTCTTCCCCTGAACT  |       |       |       |       |       |
| 9601   | 9611  | 9621  | 9631  | 9641  | 9651  |
| CCTAGAGGGTTTTTCGCTTCTCTGATAATCTGATATAACTTGCTGGCTGCCTTTCTGGT    |       |       |       |       |       |
| 9661   | 9671  | 9681  | 9691  | 9701  | 9711  |
| GCTCTTGATAGAAAATATTTCTTTTCCAGGGGACCATAACTTCTGGGAGGCAAGAATAATCT |       |       |       |       |       |
| 9721   | 9731  | 9741  | 9751  | 9761  | 9771  |
| TCCAGTCCCTTCAAGCTTTCACGTGTTGCTTGGCACTCTGCAGGCACTTCAGGAAACCTC   |       |       |       |       |       |
| 9781   | 9791  | 9801  | 9811  | 9821  | 9831  |
| GTGAGCCTTCCCCTGCCATTTGAGTGACTTGGAGTGCCAGGGTCATCCCACAGTCTCAA    |       |       |       |       |       |
| 9841   | 9851  | 9861  | 9871  | 9881  | 9891  |
| AGCAGAGCTGGCATTTGGGCCGTGTTTGACAAGCTCTCTTCCCTAACCTTACTGCTTCATCA |       |       |       |       |       |
| 9901   | 9911  | 9921  | 9931  | 9941  | 9951  |
| GGTTTCCCAGGATCATACCATGTCAAGCCCTGAACGAAACCTTTGCTCTGATGCTCTGCC   |       |       |       |       |       |
| 9961   | 9971  | 9981  | 9991  | 10001 | 10011 |
| TTCCTCTTCTGTGTTTTCCCATCTCACAGATATTGATGACCATGAGATCCCTGCTCAGAAC  |       |       |       |       |       |
| 10021  | 10031 | 10041 | 10051 | 10061 | 10071 |
| CCCCTTCCCTGTGTGGCCTGCTCTGGGCCTTTTGTGCCCCAGGCGCCAGGGCTGAGGAGCC  |       |       |       |       |       |
| 10081  | 10091 | 10101 | 10111 | 10121 | 10131 |

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